PK192 (v1.3) Apr 14, 2016

100% Material Declaration Data Sheet for Virtex-5 FFG1153

Average Weight : 10.5305 g

Component	Substance Description	CAS # or Description	% of component	Use in product	Component weight	Component % of total
Silicon Die					**0.548912**	**5.213%**
	Si	7440-21-3	100.00	basis	0.548912	
Solder Bump					**0.041809**	**0.397%**
	Sn	7440-31-5	63.00	basis	0.026340	
	Pb	7439-92-1	37.00	basis	0.015469	
Underfill					**0.065000**	**0.617%**
	Bisphenol F/ epichlorohydrin copolymer	9003-36-5	20.00	basis	0.013000	
	Phenolic resin	trade secret	15.00	basis	0.009750	
	Bisphenol A type liquid epoxy resin	25068-38-6	5.00	basis	0.003250	
	Amine type accelerator	trade secret	5.00	basis	0.003250	
	Silicon dioxide	60676-86-0	51.50	basis	0.033475	
	Carbon black	1333-86-4	1.00	basis	0.000650	
	Additives	trade secret	2.50	Additive	0.001625	
Solder paste					**0.070000**	**0.665%**
	Sn	7440-31-5	96.50	metal	0.067550	
	Ag	7440-22-4	3.00	metal	0.002100	
	Cu	7440-50-8	0.50	metal	0.000350	
Capacitor 1					**0.028000**	**0.266%**
	Ceramic(BaTiO3 type)	trade secret	61.80	Ceramic	0.017304	
	Inner Electrode(Ni)	7440-02-0	27.00	Inner electrode	0.007560	
	Outer Electrode(Cu)	7440-50-8	9.90	Out electrode	0.002772	
	Plating1(Ni)	7440-02-0	0.40	Plating1	0.000112	
	Plating2(Sn)	7440-31-5	0.90	Plating2	0.000252	
Capacitor 2					**0.093600**	**0.889%**
	Ceramic(BaTiO3 type)	trade secret	61.54	Ceramic	0.057600	
	Inner Electrode(Ni)	7440-02-0	18.21	Inner electrode	0.017040	
	Outer Electrode(Cu)	7440-50-8	17.95	Out electrode	0.016800	
	Plating1(Ni)	7440-02-0	0.77	Plating1	0.000720	
	Plating2(Sn)	7440-31-5	1.54	Plating2	0.001440	
Heat sink					**4.965400**	**47.153%**
	Cu	7440-50-8	99.54	Main material	4.942559	
	Ni	7440-02-0	0.46	Main material	0.022841	
Heat sink adhesive					**0.152000**	**1.443%**
	Aluminum oxide(Al2O3)	1344-28-1	70.00	Main material	0.106400	
	Zinc oxide (ZnO)	1314-13-2	15.00	Main material	0.022800	
	Silicone	Trade Secret	15.00	Main material	0.022800	
	Additives	Trade Secret		Additive		
Solder ball					**0.965783**	**9.171%**
	Sn	7440-31-5	95.50	Main material	0.922323	
	Ag	7440-22-4	4.00	Main material	0.038631	
	Cu	7440-50-8	0.50	Main material	0.004829	
Substrate					**3.600000**	**34.186%**
	Copper	7440-50-8	43.30	Main material	1.558800	
	Tin	7440-31-5	0.92	Main material	0.033120	
	Lead	7439-92-1	0.13	Main material	0.004680	
	Silver	7440-22-4	0.06	Main material	0.002160	
	Core	N/A	37.26	Main material	1.341360	
	PP	N/A	4.35	Main material	0.156600	
	ABF	N/A	12.20	Main material	0.439200	
	Solder Mask	N/A	1.78	Main material	0.064080	

Revision History

Date	Version	Description of Revisions
05/19/2010	1.0	Initial Xilinx release.
03/04/2011	1.1	Update component weights
03/29/2013	1.2	Updated Substrate Component
04/14/2016	1.3	Update substrate

Notice of Disclaimer

Xilinx regards this materials data to be correct but makes no guarantee as to its accuracy or completeness, including, but not limited to, with respect to its compliance with applicable environmental laws and regulations. Xilinx subcontracts the production, test and assembly of hardware devices to independent third-party vendors and materials suppliers ("Contractors"). All data provided hereunder is based on information received from Contractors. Xilinx has not independently verified the accuracy or completeness of this information which is provided solely for your reference in connection with the use of Xilinx products.

© Copyright 2016 Xilinx